Nambucca Shire Council

FOOTPATHS

Asset Management Plan (Concise)

Version 1, Scenario 1

September 2017

Document Control	Asset Management Plan

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Rev No	Date	Revision Details	Author	Reviewer	Approver
1	10 March 2016	First draft	Engineering Support Officer – Assets		
2	21 September 2017	Revised layout as per new NamsPlus 3 template, content edited, data updated	Engineering Support Officer – Assets		
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NAMS.PLUS Asset Management Plan Templates

NAMS.Plus offers two Asset Management Plan templates – 'Concise' and 'Comprehensive'.

The Concise template is appropriate for those entities who wish to present their data and information clearly and in as few words as possible whilst complying with the ISO 55000 Standards approach and guidance contained in the International Infrastructure Management Manual.

The Comprehensive template is appropriate for those entities who wish to present their asset management plan and information in a more detailed manner.

The entity can choose either template to write/update their plan regardless of their level of asset management maturity and in some cases may even choose to use only the Executive Summary.

The illustrated content is suggested only and users should feel free to omit content as preferred (e.g. where info not currently available).

The concise Asset Management Plan may be used as a supporting document to inform an overarching Strategic Asset Management Plan.

This is the **Concise** Asset Management Plan template.

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1 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process to ensure delivery of services from infrastructure is provided in a financially sustainable manner.

This asset management plan details information about infrastructure assets including actions required to provide an agreed level of service in the most cost effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services over a 20-year planning period.

This plan covers the infrastructure assets that provide footpaths.

1.2 Asset Description

These assets include:

The footpath network comprises:

Category	Total Length (kms)
• Concrete Footpaths	52.4
• Paved Footpaths	0.5
• Stencilcrete Footpaths	0.03
• Timber Stairs	0.03
• Concrete Cycleway	3.2

These infrastructure assets have significant value estimated at $8,346,851.

1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current levels in the medium term.

1.4 Future Demand

The main demands for new services are created by:

- Population growth
- Demographic changes
- Lifestyle requirements of population

These will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and managing failures.

- Monitoring development applications, service requests/complaints and traffic count information for the continual assessment of footpath function and capacity
- Monitoring requests for new lifestyle assets and use of existing assets

1.5 Lifecycle Management Plan

What does it Cost?

The projected outlays necessary to provide the services covered by this Asset Management Plan (AM Plan) includes operations, maintenance, renewal and upgrade of existing assets over the 10-year planning period is $932,000 or $93,000 on average per year.

1.6 Financial Summary

What we will do

Estimated available funding for this period is $906,000 or $91,000 on average per year as per the long term financial plan or budget forecast. This is 97% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long term financial plan can be provided. The emphasis of the Asset Management Plan is to communicate the consequences that this will have on the service provided and risks, so that decision making is “informed”.

The allocated funding leaves a shortfall of $3,000 on average per year of the projected expenditure required to provide services in the AM Plan compared with planned expenditure currently included in the Long Term Financial Plan. This is shown in the figure below.

The shortfall average can be attributed to two new assets. The first being the construction of a new footpath from Bowraville town centre to the skate park. This project alone will cost $50,000 in the 2018 financial year, which has elevated the long term average. However the commencement of this project is dependent upon grant funding.

The second is a new cycleway on the Pacific Highway Macksville, from Boundary Street to Upper Warrell Creek Road. This $500,000 project is fully funded by grant money.

Projected Operating and Capital Expenditure

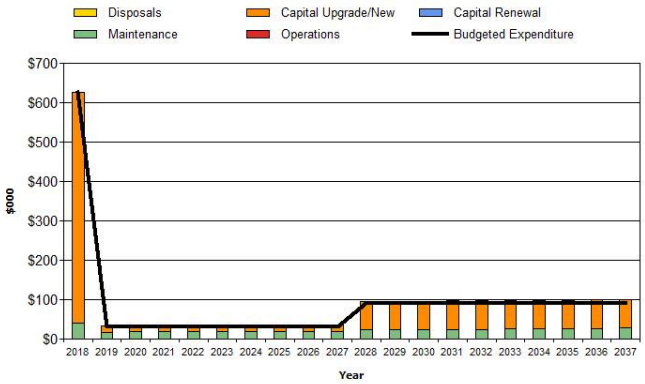


Figure Values are in current (real) dollars.

We plan to provide footpath services for the following:

- Operation, maintenance, renewal and upgrade of footpaths to meet service levels set by in annual budgets.
- Council intends to renew footpaths when required and reduce tripping hazards within the 10-year planning period.

Managing the Risks

Our present funding levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Paver movement
- Vehicle and bicycle movements
- Malicious damage
- Trip hazards

We will endeavour to manage these risks within available funding by:

- Inspections and replacement of paved footpaths with concrete footpaths

Signage alerting pedestrians to vehicle and bicycle movement

- Repairs to any malicious damage
- Inspections and removal of trip hazards

1.7 Asset Management Practices

Our systems to manage assets include:

- Council uses Civica's Authority Enterprise Software Suite as the financial system
- Council utilises a combination of Excel spread sheets, the Capital Value Record Management component in the Authority corporate software package and the Reflect program

Assets requiring renewal/replacement are identified from one of three methods provided in the 'Expenditure Template'.

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or
- Method 3 uses a combination of average network renewals plus defect repairs in the Renewal Plan and Defect Repair Plan worksheets on the 'Expenditure template'.

Method 1 was used for this asset management plan.

1.8 Monitoring and Improvement Program

The next steps resulting from this asset management plan to improve asset management practices are:

- Reassess asset condition
- Establish levels of Service through community consultation
- Further analysis of demand growth factors
- Establish renewal priority ranking criteria
- Further develop asset registers utilising asset management plans
- Develop maintenance response levels of service

2. INTRODUCTION

2.1 Background

This asset management plan communicates the actions required for the responsive management of assets (and services provided from assets), compliance with regulatory requirements, and funding needed to provide the required levels of service over a 20-year planning period.

The asset management plan is to be read with the organisation's planning documents. This should include the Asset Management Policy and Asset Management Strategy where these have been developed along with other key planning documents:

- Asset Management Policy
- Asset Management Strategy
- Asset Management Plans Summary

The infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to enable residents to walk and cycle around their community for work and recreation and to enable visitors to travel around the Shire.

Table 2.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value
• Concrete Footpaths	52.4kms	$6,959,100
• Paved Footpaths	0.5kms	$9,706
• Stencilcrete Footpaths	0.03kms	$7,057
• Timber Stairs	0.03kms	$5,257
• Concrete Cycleway	6.5kms	$1,365,731
TOTAL		**$8,346,851**

2.2 Goals and Objectives of Asset Ownership

Our goal in managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a long-term financial plan which identifies required, affordable expenditure and how it will be allocated.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 1
- • ISO 550002

2.3 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan over a 20 year planning period in accordance with the International Infrastructure Management Manual[3]. Core asset management is a 'top down'

[1] Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13
[2] ISO 55000 Overview, principles and terminology

approach where analysis is applied at the system or network level. An 'advanced' asset management approach uses a 'bottom up' approach for gathering detailed asset information for individual assets.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

This 'core' asset management plan is prepared to facilitate consultation prior to adoption by Council. Future revisions of the asset management plan will incorporate community consultation on service levels and costs of providing the service. This will assist the Council and stakeholders in matching the level of service required, service risks and consequences with the community's ability and willingness to pay for the service.

Table 3.1: Community Satisfaction Survey Levels 2016

Performance Measure	Satisfaction Level (Out of 5 with 5 being highest)	
	Urban Mean	Rural Mean
Satisfaction with footpaths and cycleways	3.23	3.33

Council is not currently meeting community expectations for footpath and cycleway assets. However, this has improved from 2013 which saw a 26% increase in community satisfaction.

Community satisfaction information is used in developing the Strategic Plan and in the allocation of resources in the budget.

3.2 Strategic and Corporate Goals

This asset management plan is prepared under the direction of the Council's vision, mission, goals and objectives.

Our vision is:

Nambucca Valley – Living at its best

Our mission is:

The Nambucca Valley will value and protect its natural environment, maintain its assets and infrastructure and develop opportunities for its people

[3] IPWEA, 2015, IIMM.

Relevant goals and objectives and how these are addressed in this asset management plan are:

Table 3.2: Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in AM Plan
Documented Levels of Service	Service levels to be provided and the costs of providing the service	Community consultation
Safe footpath network and infrastructure	Provide and maintain a safe footpath network with associated infrastructure for the Shire.	Ensuring that footpath assets are established and maintained in a safe condition
Maintain assets	Provide and maintain assets which meet the needs of the Shire.	Establishing a maintenance and renewal program that ensures provision of adequate levels of service from footpath assets.
Apposite services	To have a community where services reflect the needs of the population.	Taking into account community expectations when setting levels of service for footpath assets.

The organisation will exercise its duty of care to ensure public safety in accordance with the infrastructure risk management plan prepared in conjunction with this AM Plan. Management of infrastructure risks is covered in Section 6.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. These include:

Table 3.3: Legislative Requirements

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery
Work Health and Safety Act	Secures and promotes health, safety and welfare of people at work
Roads Act 1993	Defines rights of passage on public roads and rights of property owners adjoining public roads. Confers the authority of the road authority and provides for road classifications
Australian Accounting Standards	Set out the financial reporting standards relating to, inter alia the (re)valuation and depreciation of infrastructure assets
Australian Road Rules	Contains powers for Council to install and remove traffic control devices
Native Vegetation Act 2003	Prevent broad scale clearing unless it improves or maintains environmental outcomes
Noxious Weeds Act 1993	Prevent the establishment of new and spread of existing significant weeds. Reduce existing significant weeds
Protection of the Environment Operations Act 1997	Protect, restore and enhance the quality of the environment, having regard to the need to maintain ecologically sustainable development. Rationalise, simplify and strengthen the regulatory framework for environment protection
Road Transport (Safety and Traffic Management) Act 1999	Improve safety and efficiency of transport on roads and road related issues.
Rural Fires Act 1997	Coordinate bush fire fighting and bush fire prevention
Threatened Species Conservation Act 1995	Conserve biological diversity and promote ecologically sustainable development and protect the critical habitat of threatened species

3.4 Customer Levels of Service

Service levels are defined service levels in two terms, customer levels of service and technical levels of service. These are supplemented by organisational measures.

Customer Levels of Service measure how the customer receives the service and whether value to the customer is provided.

Customer levels of service measures used in the asset management plan are:

Quality How good is the service … *what is the condition or quality of the service?*

Function Is it suitable for its intended purpose …. *Is it the right service?*

Capacity/Use Is the service over or under used … *do we need more or less of these assets?*

The current and expected customer service levels are detailed in Tables 3.4 and 3.5. Table 3.4 shows the expected levels of service based on resource levels in the current long-term financial plan.

Organisational measures are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor, Poor/Average/Good, Very good.

These Organisational/Organizational measures provide a balance in comparison to the customer perception that may be more subjective.

Table 3.4: Customer Level of Service

	Expectation	Performance Measure Used	Current Performance	Expected Position in 10 Years based on the current budget.
Customer Outcomes				
All footpaths on Nambucca Shire Council's road network are satisfying the needs of the community				
Customer Levels of Service				
Quality	Suitable network for all users	Non slip and trip surface with accessibility for wheelchairs and mobility devices	95% suitable as currently have some paved footpaths which require renewal	100% suitable for all users as paved footpaths will be replaced and new footpaths will be constructed to this standard
Function	To link residential, retail, commercial and school areas	All residential, retail, commercial and school areas are linked by a footpath network	All areas are linked excepting the completion of the cycleway from Nambucca Heads to Macksville	All areas including new developments will be linked and the cycleway will be completed
Capacity/ Utilisation	Footpaths meet the needs of the community and tourists	Footpaths are designed and constructed as per the community's needs	On average only 3 requests are received for an extension of the network each year	Footpaths will continue to meet the needs of the community with a minimal request for an extended network

3.5 Technical Levels of Service

Technical Levels of Service - Supporting the customer service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- Operations – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc.
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),
- Upgrade/New – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).

Service and asset managers plan, implement and control technical service levels to influence the customer service levels.[4]

Table 3.5 shows the technical levels of service expected to be provided under this AM Plan. The 'Desired' position in the table documents the position being recommended in this AM Plan.

Table 3.5: Technical Levels of Service

Service Attribute	Service Activity Objective	Activity Measure Process	Current Performance *	Desired for Optimum Lifecycle Cost **
TECHNICAL LEVELS OF SERVICE				
Operations				
	Servicing and management	Annual condition and defects inspections	Annual condition and defects inspections of 100% of network	Annual inspections of 100% of network
	Cost effectiveness	Percentage of maintenance done by proactive repairs	75% of proactive maintenance	100% of proactive maintenance
Maintenance				
	Maintain footpath assets to attain full operational life	Maintenance identified in footpath inspections	85%	95%
		Budget	$40,000	$40,000
Renewal				
	Footpaths to be renewed when their condition deteriorates	Condition assessments	80%	100%
		Budget	$87,000	To be determined
Upgrade/New				
	1.8km of new cycleway			
		Budget	$500,000	To be determined

Note: * Current activities and costs (currently funded).
** Desired activities and costs to sustain current service levels and achieve minimum life cycle costs (not currently funded).

[4] IPWEA, 2015, IIMM, p 2|28.

4. FUTURE DEMAND

4.1 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc.

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets were identified and are documented in Table 4.3.

4.3 Demand Impact on Assets

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 4.3.

Table 4.3: Demand Drivers, Projections and Impact on Services

Demand drivers	Present position	Projection	Impact on services
Population	Present population of just over 19,000	Forecast population by 2025 is in the order of 22,000	Increased population is likely to lead to an increase in pedestrian traffic
Lifestyle assets	Currently four footbridges	Two new footbridges to be constructed in the near future	Increase demand for lifestyle assets for foot/cycle paths and footbridges

4.4 Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 4.4. Further opportunities will be developed in future revisions of this asset management plan.

Table 4.4: Demand Management Plan Summary

Demand Driver	Impact on Services	Demand Management Plan
Population	Increased population is likely to lead to an increase in pedestrian traffic on footpaths	Monitoring development applications, service requests/complaints and traffic count information for the continual assessment of footpath function and capacity.
Lifestyle assets	Increase demand for lifestyle assets for foot/cycle paths.	Monitoring requests for new lifestyle assets and use of existing assets

4.5 Asset Programs to meet Demand

The new assets required to meet demand can be acquired, donated or constructed. Additional assets are discussed in Section 5.5. The summary of the cumulative value of additional asset is shown in Figure 1.

Figure 1: Upgrade and New Assets to meet Demand – (Cumulative)

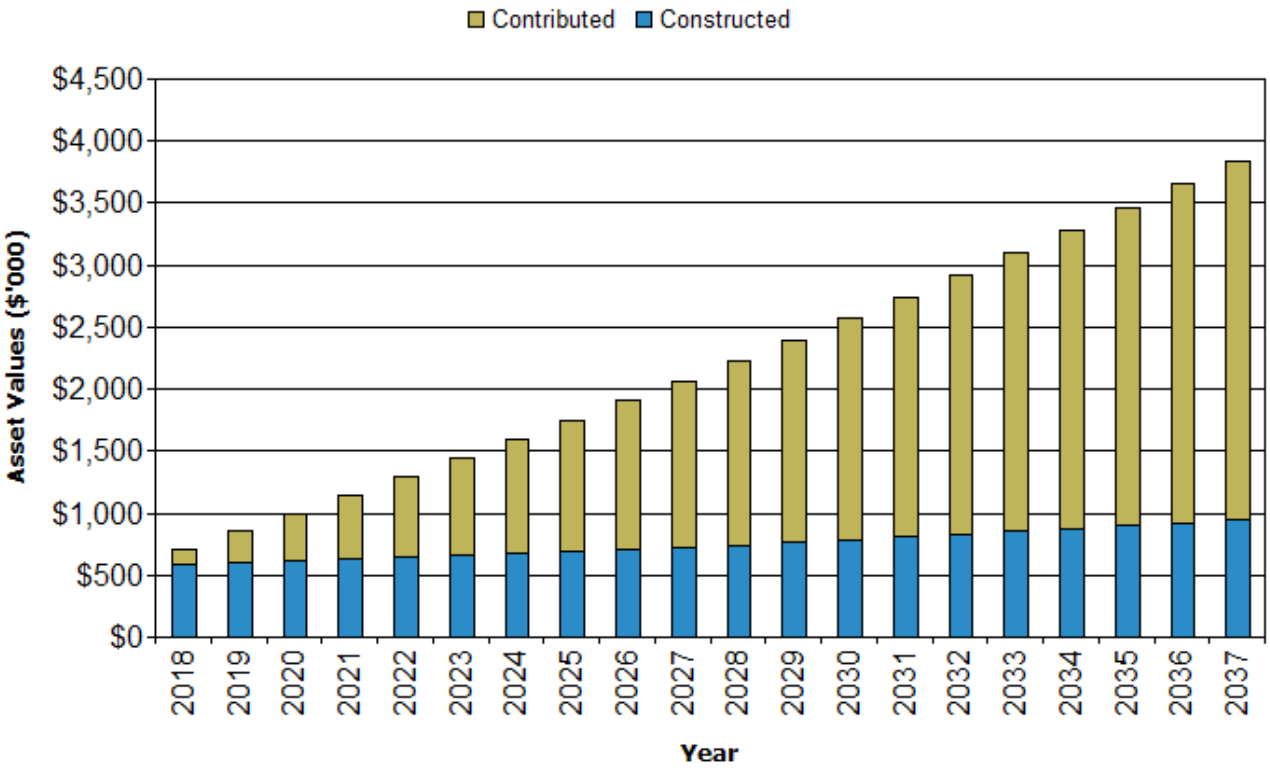


Figure Values are in current (real) dollars.

The impact the acquisition of these new assets is that Council must commit ongoing funding in operations, maintenance and renewal programs.

Acquiring these new assets will commit ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long term financial plan further in Section 5.

5. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in Section 3) while managing life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this asset management plan are shown in Table 2.1.

Nambucca Shire Council has a footpath network of approximately 59kms in length. The network is comprised of concrete, paved and stencilcrete footpaths with some timber stairs and a concrete cycleway.

The age profile of the assets included in this AM Plan are shown in Figure 2.

Figure 2: Asset Age Profile

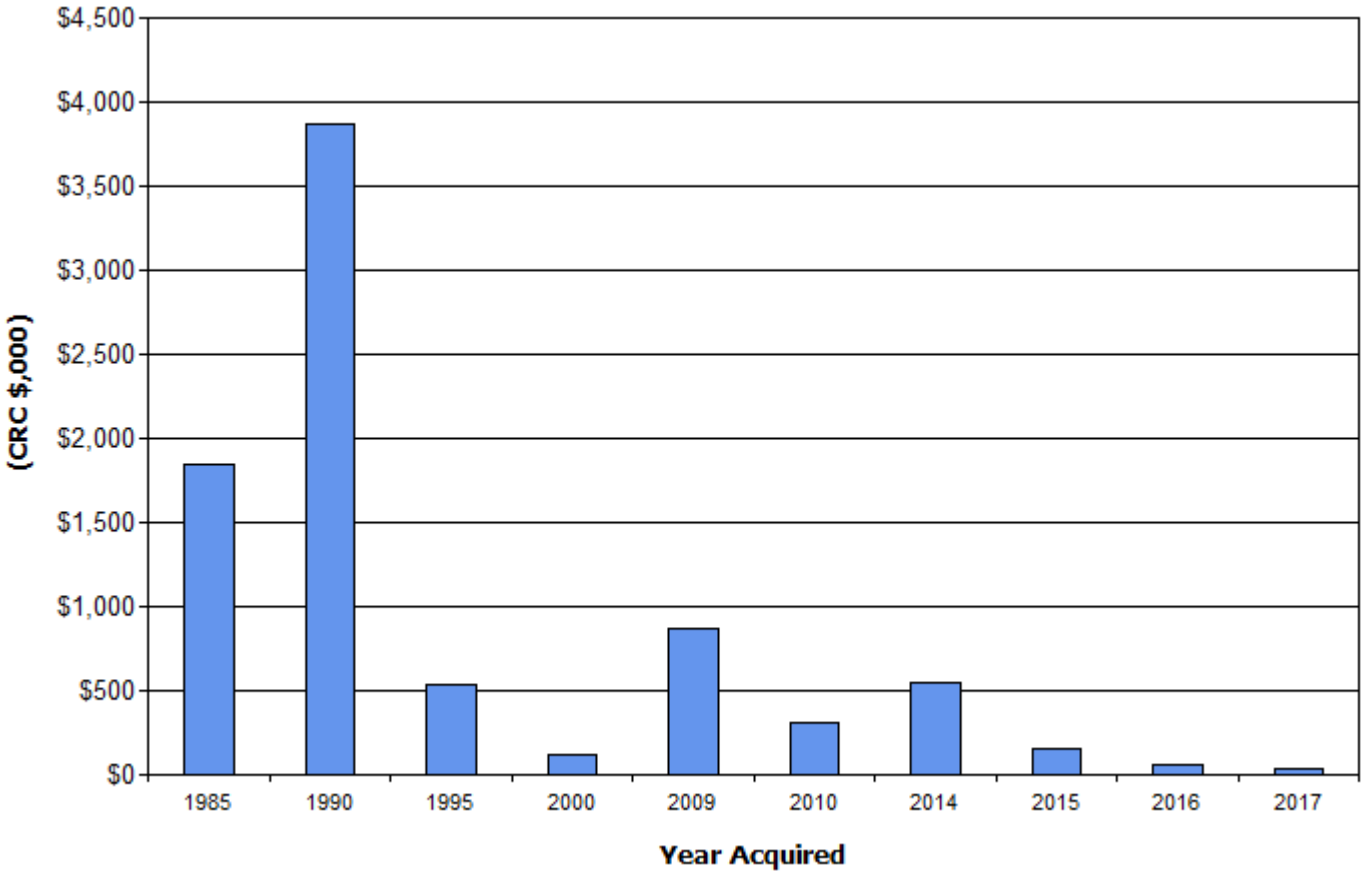


Figure Values are in current (real) dollars.

The expected useful life of footpaths is 85 years, which will see significant funding to be required for renewals in the years 2070 - 2075.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Pacific Highway Cycleway	The cycleway does not yet link Nambucca Heads and Macksville. There is still approximately 4kms of cycleway to be constructed.

The above service deficiencies were identified from the Footpath Technical Asset Register and Arc GIS.

5.1.3 Asset condition

Condition is monitored through inspections by qualified staff on a scheduled basis being annual defect inspections, post flood event or when advice of a defect is received.The condition profile of our assets is shown in Figure 3.

Fig 3: Asset Condition Profile

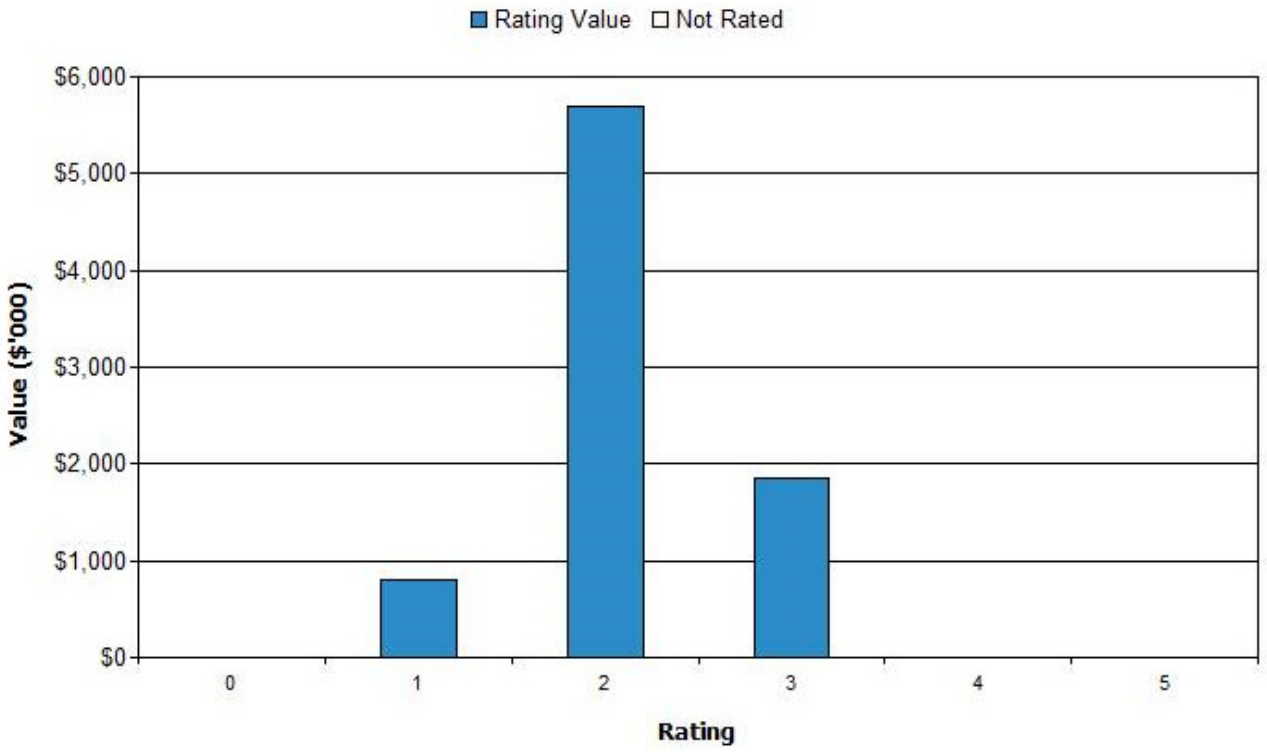


Figure Values are in current (real) dollars.

The majority of the assets are in condition 2, with condition 3 following. Analysis of the footpaths in condition 3 should be undertaken to plan for maintenance and future renewal.

Condition is measured using a 1 – 5 grading system[5] as detailed in Table 5.1.3.

Table 5.1.3: Simple Condition Grading Model

Condition Grading	Description of Condition
1	**Very Good**: only planned maintenance required
2	**Good**: minor maintenance required plus planned maintenance
3	**Fair**: significant maintenance required
4	**Poor**: significant renewal/rehabilitation required
5	**Very Poor**: physically unsound and/or beyond rehabilitation

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services such as public health, safety and amenity, e.g. cleaning, street sweeping, utilities costs and street lighting.

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again, e.g. road patching.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating.

Maintenance expenditure is shown in Table 5.2.1.

Table 5.2.1: Maintenance Expenditure Trends

[5] IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

Year	Maintenance Budget $
2016/2017	$27257
2017/2018	$40,000
2018/2019	$16,000

Maintenance expenditure levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance expenditure levels are such that they will result in a lesser level of service, the service consequences and service risks have been identified and s highlighted in this AM Plan and service risks considered in the Infrastructure Risk Management Plan.

Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 4. Note that all costs are shown in current 2018 dollar values (i.e. real values).

Figure 4: Projected Operations and Maintenance Expenditure

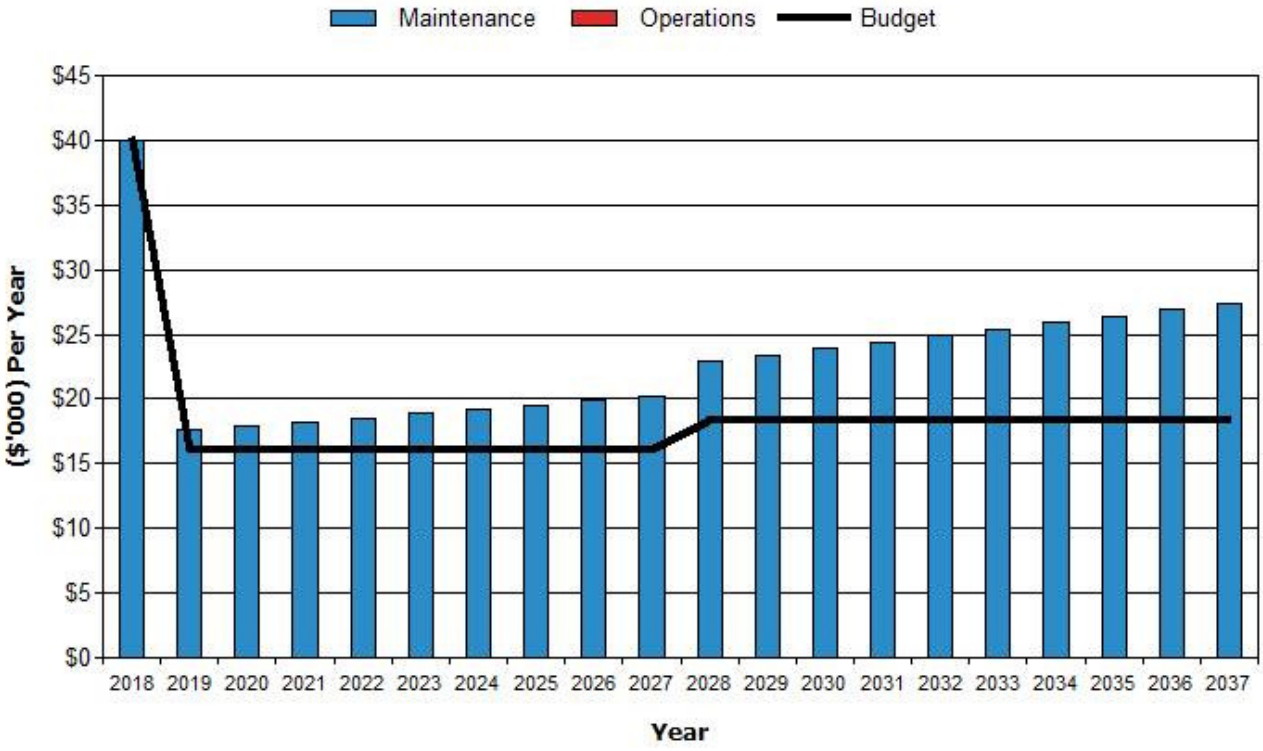


Figure Values are in current (real) dollars.

Future budgets will need to be reviewed as the maintenance costs are exceeding the budgeted amounts. The second 10 years of the above report are an average of the first 10 years. The grant funding received for the footpath/cycleway in Macksville, has seen a spike in the first years expenditure which has also impacted the long term.

Deferred maintenance, i.e. works that are identified for maintenance and unable to be funded are to be included in the risk assessment and analysis in the infrastructure risk management plan.

Maintenance is funded from the operating budget where available. This is further discussed in Section 7.

5.3 Renewal/Replacement Plan

Renewal and replacement expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an upgrade/expansion or new work expenditure resulting in additional future operations and maintenance costs.

Assets requiring renewal/replacement are identified from one of three methods provided in the 'Expenditure Template'.

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or
- Method 3 uses a combination of average network renewals plus defect repairs in the Renewal Plan and Defect Repair Plan worksheets on the 'Expenditure template'.

Method 1 was used for this asset management plan.

5.3.1 Renewal ranking criteria

Asset renewal and replacement is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. roughness of a road).[6]

It is possible to get some indication of capital renewal and replacement priorities by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be greatest,
- Have a total value representing the greatest net value,
- Have the highest average age relative to their expected lives,
- Are identified in the AM Plan as key cost factors,
- Have high operational or maintenance costs, and
- Have replacement with a modern equivalent asset that would provide the equivalent service at a savings.[7]

The ranking criteria used to determine priority of identified renewal and replacement proposals is detailed in Table 5.3.1.

Table 5.3.1: Renewal and Replacement Priority Ranking Criteria

Criteria	Weighting
Physical Conditions (eg type of material, structure and width)	50%
Risk and Safety Impact	25%
Environmental Condition including aesthetic	10%
Social conditions (eg. pedestrian generators)	15%
Total	**100%**

5.3.2

[6] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.
[7] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time when the asset stock increases. The expenditure is required is shown in Fig 5. Note that all amounts are shown in current (real) dollars.

The projected capital renewal and replacement program is shown in Appendix B.

Fig 5: Projected Capital Renewal and Replacement Expenditure

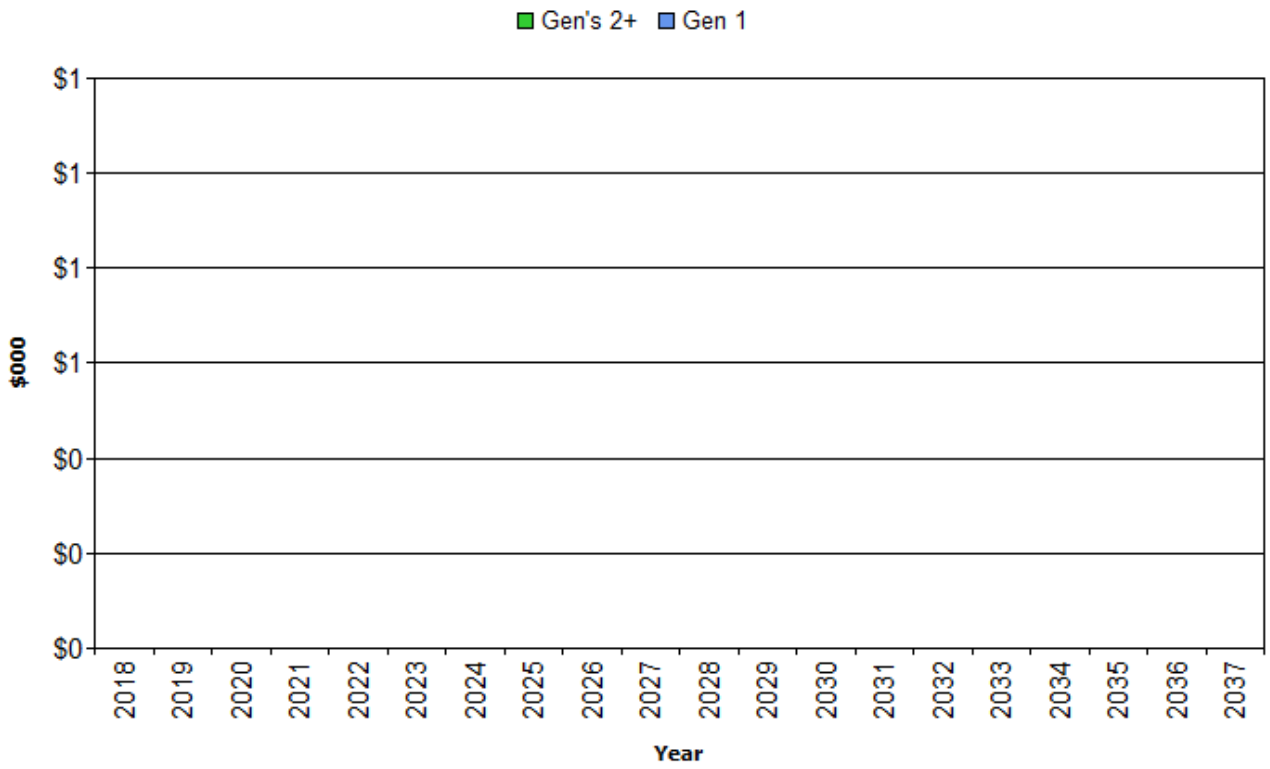


Figure Values are in current (real) dollars.

At the time of writing this asset management plan, there is no requirement for the next 10 years for footpath renewal.

Deferred renewal and replacement, i.e. those assets identified for renewal and/or replacement and not scheduled in capital works programs are to be included in the risk analysis process in the risk management plan.

Renewals and replacement expenditure in the capital works program will be accommodated in the long term financial plan. This is further discussed in Section 7.

5.4 Creation/Acquisition/Upgrade Plan

New works are those that create a new asset that did not previously exist, or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost. These additional assets are considered in Section 4.4.

5.4.1 Selection criteria

New assets and upgrade/expansion of existing assets are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed below.

Table 5.4.1: New Assets Priority Ranking Criteria

Criteria	Weighting
Public transport routes	15%
Missing links within the network	25%
Established footpaths within local area	15%
Petitions received	20%
Proximity to schools and reserves	25%
Total	**100%**

5.4.2 Summary of future upgrade/new assets expenditure

Projected upgrade/new asset expenditures are summarised in Fig 6. The projected upgrade/new capital works program is shown in Appendix C. All amounts are shown in real values.

Fig 6: Projected Capital Upgrade/New Asset Expenditure

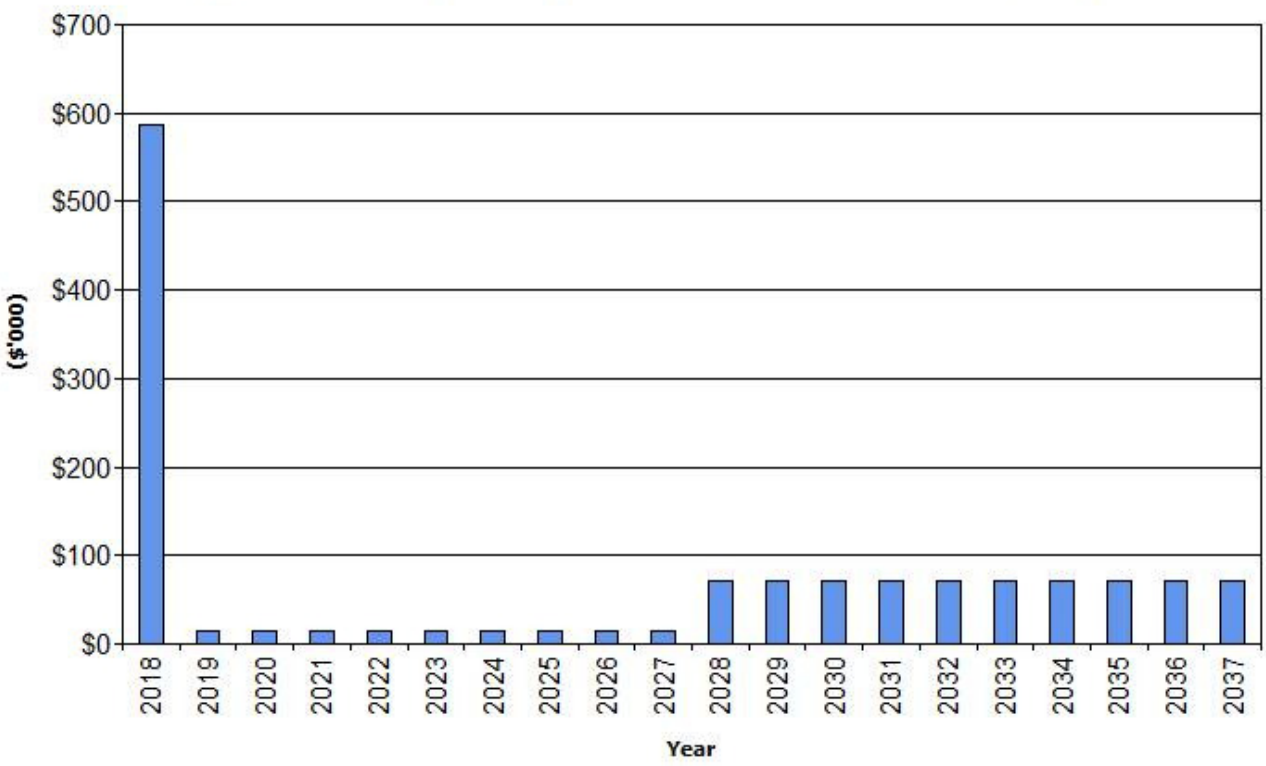


Figure Values are in current (real) dollars.

Expenditure on new assets and services in the capital works program will be accommodated in the long term financial plan but only to the extent of the available funds

5.4.3 Summary of asset expenditure requirements

The financial projections from this asset plan are shown in Fig 7 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets). Note that all costs are shown in real values.

The bars in the graphs represent the anticipated budget needs required to achieve lowest lifecycle costs, the budget line indicates what is currently available. The gap between these informs the discussion on achieving the balance between services, costs and risk to achieve the best value outcome.

Fig 7: Projected Operating and Capital Expenditure

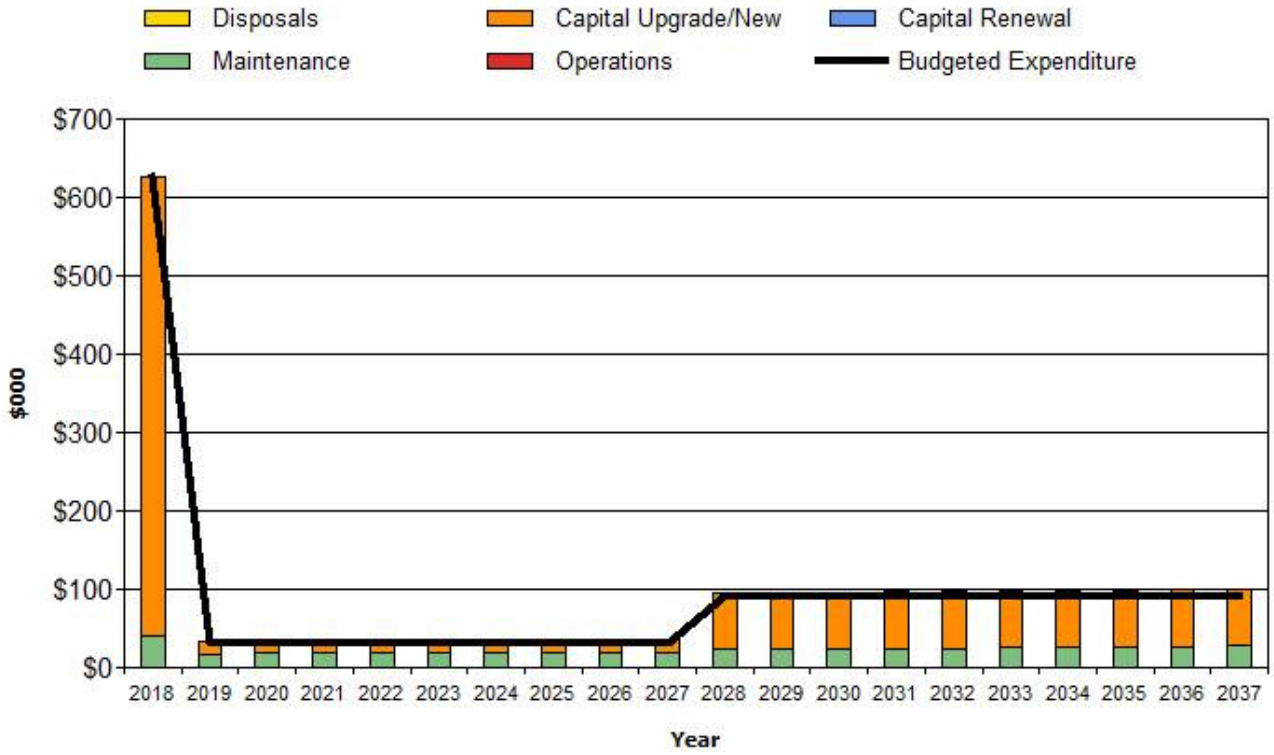


Figure Values are in current (real) dollars.

Council's budget going forward meets the required funding for operating and capital expenditure.

5.5 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.5, together with estimated annual savings from not having to fund operations and maintenance of the assets. These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any. Any costs or revenue gained from asset disposals is accommodated in the long term financial plan.

At the time of writing this asset management plan, Council has not identified any assets for disposal.

6. RISK MANAGEMENT PLAN

The purpose of infrastructure risk management is to document the results and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2009 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2009 as: 'coordinated activities to direct and control with regard to risk'[8].

An assessment of risks[9] associated with service delivery from infrastructure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock'. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

[8] ISO 31000:2009, p 2
[9] Nambucca Shire Council Risk Management Policy (Trim 2440/2011)

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Similarly, critical failure modes are those which have the highest consequences.

Council does not have any footpaths deemed as critical assets at this stage. In all cases there are alternative means of access.

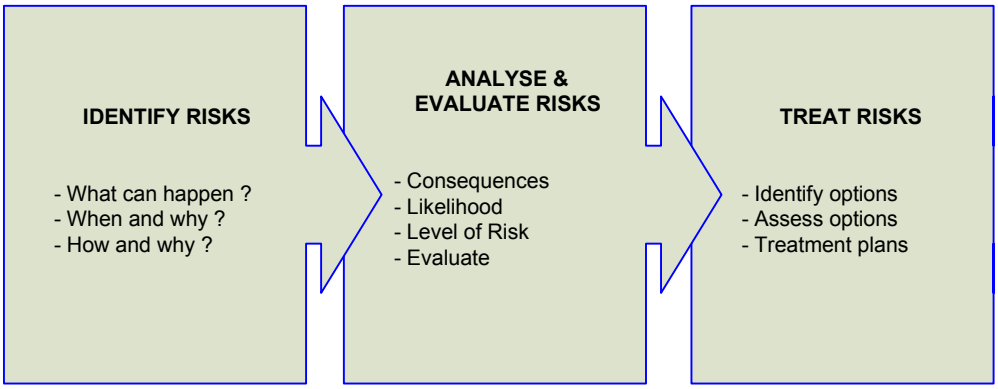
6.2 Risk Assessment

The risk management process used in this project is shown in Figure 6.2 below.

It is an analysis and problem solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of the ISO risk assessment standard ISO 31000:2009.

Fig 6.2 Risk Management Process – Abridged



The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

An assessment of risks[10] associated with service delivery from infrastructure assets has identified the critical risks that will result in significant loss, 'financial shock' or a reduction in service.

Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment cost after the selected treatment plan is implemented is shown in Table 6.2. These risks and costs are reported to management and Councillors.

Table 6.2: Critical Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Any cycleway	Collision between cyclist and pedestrian	H	Public education	L	$2,000
Any category 1-5 footpath	Collision between cyclist and pedestrian	H	Public Education	L	$2,000

Note * The residual risk is the risk remaining after the selected risk treatment plan is operational.

[10] Nambucca Shire Council Risk Management Policy (Trim 2440/2011)

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to our customers and the services we provide. To adapt to changing conditions and grow over time we need to understand our capacity to respond to possible disruptions and be positioned to absorb disturbance and act effectively in a crisis to ensure continuity of service.

Resilience is built on aspects such as response and recovery planning, financial capacity and crisis leadership.

Our current measure of resilience is shown in Table 6.4 which includes the type of threats and hazards, resilience assessment and identified improvements and/or interventions.

Table 6.4: Resilience

Threat / Hazard	Resilience LMH	Improvements/Interventions
Collision between cyclist and pedestrian on a cycleway	High	Public education
Collision between cyclist and pedestrian on a footpath	High	Public education

6.4 Service and Risk Trade-Offs

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources.

6.4.1 What we cannot do

Council has not identified any operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years.

6.4.2 Service trade-off

Council can undertake all operations and maintenance activities and capital projects that have been identified.

6.4.3 Risk trade-off

Council has not identified any risk consequences as it can meet its required operations and maintenance activities.

These actions and expenditures are considered in the projected expenditures, and where developed are included in the Risk Management Plan.

7. FINANCIAL SUMMARY

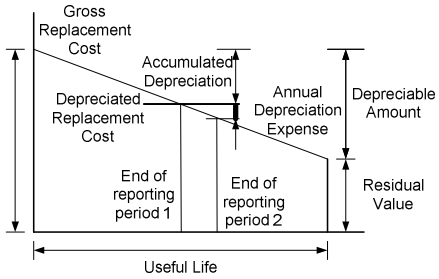
This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset performance.

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below. Assets are valued at cost to replace.

Gross Replacement Cost	$8,346,852
Depreciable Amount	$2,214,842
Depreciated Replacement Cost[11]	$6,132,010
Annual Average Asset Consumption	$98,155



7.1.1 Sustainability of service delivery

Two key indicators for service delivery sustainability that have been considered in the analysis of the services provided by this asset category, these being the:

- asset renewal funding ratio, and
- medium term budgeted expenditures/projected expenditure (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio[12] 162%

The Asset Renewal Funding Ratio is the most important indicator and indicates that over the next 10 years of the forecasting that we expect to have 162%of the funds required for the optimal renewal and replacement of assets.

Medium term – 10 year financial planning period

This asset management plan identifies the projected operations, maintenance and capital renewal expenditures required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

These projected expenditures may be compared to budgeted expenditures in the 10 year period to identify any funding shortfall. In a core asset management plan, a gap is generally due to increasing asset renewals for ageing assets.

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is $1,211,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is $990,000 on average per year giving a 10 year funding shortfall of $221,000 per year. This indicates 82% of the projected expenditures needed to provide the services documented in the asset management plan. This excludes upgrade/new assets.

Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and financing to achieve a financial indicator of approximately 1.0 for the first years of the asset management plan and ideally over the 10-year life of the Long Term Financial Plan.

7.1.2 Projected expenditures for long term financial plan

Table 7.1.2 shows the projected expenditures for the 10 year long term financial plan.

Expenditure projections are in 2018 real values.

Table 7.1.2: Projected Expenditures for Long Term Financial Plan ($000)

Year	Operations	Maintenance	Projected	Capital	Disposals

[11] Also reported as Written Down Value, Carrying or Net Book Value.
[12] AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

			Capital Renewal	Upgrade/New	
2018	$0	$40	$0	$587	$0
2019	$0	$18	$0	$15	$0
2020	$0	$18	$0	$15	$0
2021	$0	$18	$0	$15	$0
2022	$0	$19	$0	$15	$0
2023	$0	$19	$0	$15	$0
2024	$0	$19	$0	$15	$0
2025	$0	$20	$0	$15	$0
2026	$0	$20	$0	$15	$0
2027	$0	$20	$0	$15	$0
2028	$0	$23	$0	$72	$0
2029	$0	$23	$0	$72	$0
2030	$0	$24	$0	$72	$0
2031	$0	$24	$0	$72	$0
2032	$0	$25	$0	$72	$0
2033	$0	$25	$0	$72	$0
2034	$0	$26	$0	$72	$0
2035	$0	$26	$0	$72	$0
2036	$0	$27	$0	$72	$0
2037	$0	$27	$0	$72	$0

All dollar values are in ($'000)'s

7.2 Funding Strategy

Funding for assets is provided from the budget and long term financial plan.

The financial strategy of the entity determines how funding will be provided, whereas the asset management plan communicates how and when this will be spent, along with the service and risk consequences of differing options.

7.3 Valuation Forecasts

Asset values are forecast to increase as additional assets are added.

Additional assets will generally add to the operations and maintenance needs in the longer term, as well as the need for future renewal. Additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan are:

Table 7.4: Key Assumptions made in AM Plan and Risks of Change

Key Assumptions	Risks of Change to Assumptions
Unit rates have been used to calculate replacement rates. For example: cost or replacement per metre square of existing footpaths. These unit rates are based on past history and have been verified against recently replaced assets.	Unit rates changing therefor cost of footpaths increases.

7.5 Forecast Reliability and Confidence

The expenditure and valuations projections in this AM Plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale[13] in accordance with Table 7.5.

Table 7.5: Data Confidence Grading System

Confidence Grade	Description
A Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C Uncertain	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D Very Uncertain	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy ± 40%
E Unknown	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is considered to be B

8. PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices[14]

8.1.1 Accounting and financial data sources

Council uses Civica's Authority Enterprise Software Suite as the financial system.

8.1.2 Asset management data sources

Council's asset register is an excel spreadsheet incorporating all of council's infrastructure assets. GIS is also being used to identify assets.

[13] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.
[14] ISO 55000 Refers to this the Asset Management System

8.2 Improvement Plan

The asset management improvement plan generated from this asset management plan is shown in Table 8.1.

Table 8.1: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Reassess asset condition	Technical Officer – Infrastructure Assets	Staff time	Annual inspections
2	Establish levels of Service through community consultation	Manager Assets	Staff time	Before next AM plan review
3	Further analysis of demand growth factors	Manager Assets	Staff time	Before next AM plan review
4	Establish renewal priority ranking criteria	Manager Assets	Staff time	Before next AM plan review
5	Implement regular inspection regimes	Technical Officer – Infrastructure Assets	Staff time	Before next AM plan review
6	Further develop asset registers utilising asset management plans	Manager Assets	Staff time	Before next AM plan review
7	Componentise assets to reflect separate lives of deck and structures	Manager Assets	Staff time	Before next AM plan review
8	Develop action plans for critical assets	Manager Assets	Staff time	Before next AM plan review
9	Develop disposal plans	Manager Assets	Staff time	Before next AM plan review
10	Develop maintenance response levels of service	Manager Assets	Staff time	Before next AM plan review

8.3 Monitoring and Review Procedures

This asset management plan will be reviewed during annual budget planning processes and amended to show any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

The AM Plan will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade/new and asset disposal expenditures and projected expenditure values incorporated into the long term financial plan.

The AM Plan has a life of 4 years and should be revised before 2021. This cycle matches the Council election cycle and IP & R periods.

8.4 Performance Measures

The effectiveness of the asset management plan can be measured in the following ways:

- The degree to which the required projected expenditures identified in this asset management plan are incorporated into the long term financial plan,
- The degree to which 1-5 year detailed works programs, budgets, business plans and corporate structures take into account the 'global' works program trends provided by the asset management plan,
- The degree to which the existing and projected service levels and service consequences (what we cannot do), risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the target of 1.0.

9. REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
- IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM.
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2012 LTFP Practice Note 6 PN Long Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- Nambucca Shire 2027 Community Strategic Plan
- Delivery Program 2017-2021
- Operational Plan 2017/18

10. APPENDICES

Appendix A Projected 10 year Capital Renewal and Replacement Works Program

Appendix B Projected 10 year Capital Upgrade/New Works Program

Appendix C LTFP Budgeted Expenditures Accommodated in AM Plan

Appendix A Projected 10-year Capital Renewal and Replacement Works Program

Council has not identified any capital renewal and replacement works over the next 10 years.

Appendix B Projected Upgrade/Exp/New 10-year Capital Works Program

($000)

Year	Item	Description	Estimate
2018	1	As per adopted budget	$87
2018	2	New cycleway, Pacific Highway from Boundary Street to Upper Warrell Creek Road	$500
		Total	**$587**
Year		**Description**	**Estimate**
2019	1	Estimated expenditure	$15
		Total	**$15**
Year	**Item**	**Description**	**Estimate**
2020	1	Estimated expenditure	$15
		Total	**$15**
Year		**Description**	**Estimate**
2021	1	Estimated expenditure	$15
		Total	**$15**
Year	**Item**	**Description**	**Estimate**
2022	1	Estimated expenditure	$15
		Total	**$15**
Year		**Description**	**Estimate**
2023	1	Estimated expenditure	$15
		Total	**$15**
Year	**Item**	**Description**	**Estimate**
2024	1	Estimated expenditure	$15
		Total	**$15**
Year		**Description**	**Estimate**
2025	1	Estimated expenditure	$15
		Total	**$15**
Year	**Item**	**Description**	**Estimate**
2026	1	Estimated expenditure	$15
		Total	**$15**
Year		**Description**	**Estimate**
2027	1	Estimated expenditure	$15
		Total	**$15**
Year	**Item**	**Description**	**Estimate**
2028	1	Estimated expenditure	$15
		Total	**$15**

Appendix C Budgeted Expenditures

Accommodated in LTFP

NAMS.PLUS3 Asset Management **Nambucca SC**

Footpaths_TB_2017_S1_V1 **Asset Management Plan**

First year of expenditure projections **2018** (financial yr ending)

Footpaths_TB_2017

Asset values at start of planning period

Current replacement cost	$8,347 (000)	Calc CRC from Asset Register	$8,347 (000)
Depreciable amount	$2,214 (000)	This is a check for you.	
Depreciated replacement cost	$6,132 (000)		
Annual depreciation expense	$98 (000)		

Operations and Maintenance Costs for New Assets

	% of asset value
Additional operations costs	0.00%
Additional maintenance	0.22%
Additional depreciation	4.43%
Planned renewal budget (information only)	

Ex cal data

You may use these values calculated from your data or overwrite the links.

Planned Expenditures from LTFP

20 Year Expenditure Projections Note: Enter all values in current **2018** values

Financial year ending	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
	$000	$000	$000	$000	$000	$000	$000	$000	$000	$000	$000
Expenditure Outlays included in Long Term Financial Plan (in current $ values)											
Operations											
Operations **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Management **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
AM systems **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total operations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Maintenance											
Reactive maintenance **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Planned maintenance **budget**	$40	$16	$16	$16	$16	$16	$16	$16	$16	$16	$18
Specific maintenance items **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total maintenance	$40	$16	$16	$16	$16	$16	$16	$16	$16	$16	$18
Capital											
Planned renewal **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Planned upgrade/new **budget**	$587	$15	$15	$15	$15	$15	$15	$15	$15	$15	$72
Non-growth contributed asset value	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Asset Disposals											
Est Cost to dispose of assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Carrying value (DRC) of disposed assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)

Additional Expenditure Outlays required and not included above	2018 $000	2019 $000	2020 $000	2021 $000	2022 $000	2023 $000	2024 $000	2025 $000	2026 $000	2027 $000	2028 $000
Operations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Renewal	to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)										
Capital Upgrade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
User Comments #2											

Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)

	2018 $000	2019 $000	2020 $000	2021 $000	2022 $000	2023 $000	2024 $000	2025 $000	2026 $000	2027 $000	2028 $000
Forecast Capital Renewal from Forms 2A & 2B	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Forecast Capital Upgrade from Form 2C	$587	$15	$15	$15	$15	$15	$15	$15	$15	$15	$72